

Amendments to the Claims

1. (Previously Presented) An automatic toilet room flush valve, comprising:
a valve body including an inlet and an outlet and a valve seat inside the body;
a valve member cooperatively arranged with said valve seat, said valve member being constructed and arranged to control water flow between said inlet and said outlet, movement of said valve member between open and closed positions being controlled by water pressure inside a pilot chamber; ~~and~~

an external cover designed for enclosing an electronic control module comprising a battery, and a sensor and said external cover enclosing an actuator for controlling operation of said flush valve; and

a plastic housing located inside said external cover constructed to enclose said electronic control module, said battery and said sensor in a sealed arrangement, wherein said external cover including at least two removable cover parts separately removable, said external cover being attachable and removable with respect to said valve body, and wherein said external cover is attached to said valve body in a manner also removably attaching said plastic housing including said control module located and sealed inside including a plastic housing with respect to said valve body.

2. (Previously Presented) An automatic toilet room flush valve, comprising:
a valve body including an inlet and an outlet and a valve seat inside said body;
a valve member cooperatively arranged with said valve seat, said valve member being constructed and arranged to control water flow between said inlet and said outlet, movement of said valve member between open and closed positions being controlled by water pressure inside a pilot chamber; ~~and~~

an external cover designed for enclosing an electronic control module comprising a battery, and a sensor and for enclosing an actuator for controlling operation of said flush valve, said external cover including at least a main cover body and a top cover separately removable with respect to said main cover body, said external cover being

attachable with respect to said valve body in a manner also removably attaching said control module with respect to said valve body; and

a button constructed for manually triggering a flush cycle of said valve member, said button being attached to and removable with said top cover without removal of said electronic control module, wherein both said main cover body and said top cover of said external cover are removable to enable separate servicing and replacement of said control module while maintaining said water pressure in said pilot chamber.

3. (Original) The flush valve of claim 1 wherein said external cover includes said cover parts forming a main cover body, a front cover and a top cover, said front cover including a sensor window.

4. (Original) The flush valve of claim 2 wherein said main cover body provides overall rigidity to said external cover.

5. (Currently Amended) The flush valve of claim 2 further including a front cover including a sensor window.

6. (Previously Presented) The flush valve of claim 5 wherein said sensor is an optical sensor and said sensor window includes an optical window.

7. (Original) The flush valve of claim 6 further constructed to adjust detection sensitivity of said sensor while maintaining said optical window located on said main cover body.

8. (Original) The flush valve of claim 2 wherein said top cover includes at least one side surface designed for facilitating removal of said top cover.

9. (Original) The flush valve of claim 2 wherein said top cover is attached with respect to said valve body using at least one screw.

10. (Currently Amended) An automatic toilet room flush valve, comprising:
a valve body including an inlet and an outlet and a valve seat inside said body;
a valve member cooperatively arranged with said valve seat, said valve member being constructed and arranged to control water flow between said inlet and said outlet, movement of said valve member between open and closed positions being controlled by water pressure inside a pilot chamber; and
an external cover designed for enclosing an electronic control module comprising a battery, and a sensor and for enclosing an actuator for controlling operation of said flush valve, said external cover including at least a main cover body and a top cover separately removable with respect to said main cover body, said external cover being attachable with respect to said valve body in a manner also ~~removably~~ attaching said control module,
wherein both said main cover body and said top cover of said external cover are removable to enable separate servicing and replacement of said control module while maintaining said water pressure in said pilot chamber,
wherein said main cover body, said front cover, and said top cover are constructed to include attachment surfaces enabling attachment ~~are attached~~ by at least one screw to a pilot cap defining said pilot chamber and being attached to said valve body.

11. (Currently Amended) The flush valve of claim 2 wherein said ~~top cover~~ includes a button ~~is~~ constructed to move between upper and lower positions and thereby displace a magnet cooperatively arranged with a reed sensor designed for manually triggering said a flush cycle when pushed to said lower position.

12. (Original) The flush valve of claim 11 further including a removable element designed for shipping and storage, said removable element being positioned to retain said button in said lower position when assembling said top cover.

13. (Previously Presented) The flush valve of claim 1 or 2 wherein said valve member includes a piston.

14. (Previously Presented) The flush valve of claim 1 or 2 wherein said valve member includes a flexible diaphragm.

15. (Previously Presented) The flush valve of claim 14 wherein said flexible diaphragm includes a centrally located passage connecting a relief passage and said outlet, said flexible diaphragm being retained with respect to said valve body by a pilot cap defining said pilot chamber.

16. (Previously Presented) The flush valve of claim 15 including a bypass orifice in said diaphragm connecting said inlet with a pressure chamber inside said pressure cap, said orifice having a cross section area smaller than that of said passage.

Claims 17 – 22 cancelled

23. (Currently Amended) In an automatic toilet flush valve including a body having an inlet and an outlet, a valve assembly in said body constructed and arranged to open and close water flow from said inlet to said outlet upon actuation signals provided by an electronic system to an actuator, said automatic flush valve comprising:

a pilot cap defining a pilot chamber in communication with said outlet via a relief passage controlled by said actuator receiving drive signals from said electronic system; and

a cover, mounted above said pilot cap, constructed to provide housing for said electronic system, said cover being removable while maintaining water pressure inside said pilot cap and enabling replacement of said electronic system while maintaining said water pressure inside said pilot cap, said cover including at least two parts being held together using at least one screw attachable to said pilot cap, wherein said cover is removable without displacing said electronic system.

24. (Previously Presented) In an automatic toilet flush valve including a body having an inlet and an outlet, a valve assembly in said body constructed and arranged to open and close water flow from said inlet to said outlet upon actuation signals provided by an electronic system to an actuator, said automatic flush valve comprising:

a pilot cap defining a pilot chamber in communication with said outlet via a relief passage controlled by said actuator;

a sensor, included in said electronic system, constructed to detect a user located in front of said flush valve and designed to provide control signals to said electronic system, said electronic system being constructed to provide drive signals to said actuator; and

a cover mounted above said pilot cap and constructed to provide housing for said electronic system, said cover being designed cooperatively with said electronic system to enable sensitivity adjustment of said sensor without removal of said cover.

25. (Original) The automatic flush valve of claim 23 or 24 wherein said sensor includes an infrared sensor.

26. (Original) The automatic flush valve of claim 23 or 24 wherein said sensor includes a presence sensor.

27. (Original) The automatic flush valve of claim 23 or 24 wherein said sensor includes a motion sensor.

28. (Previously Presented) The automatic flush valve of claim 24 wherein said cover includes a main cover body, a front cover and a top cover, said front cover including a sensor window, wherein said main cover body, said front cover and said top cover being held together using at least one screw attachable to said pilot cap.

29. (Currently Amended) The automatic flush valve of claim 23 or 24 wherein said valve assembly includes a flexible diaphragm fixed relative to said pilot pressure cap, said valve assembly including a bleed passage in said flexible diaphragm in communication with said pilot chamber and being controllably sealable by said actuator.

Claims 30 – 33 are cancelled

34. (Original) The automatic flush valve of claim 23 or 24 wherein said actuator is an isolated actuator.

Claims 35 - 36 cancelled

37. (Previously Presented) The flush valve of claim 23 or 24 further including a button constructed to move between depressed and extended positions and designed for manually triggering a flush cycle when pushed to said depressed position.

38. (Previously Presented) The flush valve of claim 37 further including a removable element designed for shipping and storage, said removable element being positioned to retain said button in said depressed position.

39. (Previously Presented) The flush valve of claim 1 further including a button constructed to move between depressed and extended positions and designed for manually triggering a flush cycle when pushed to said depressed position.

40. (Previously Presented) The flush valve of claim 39 further including a removable element designed for shipping and storage, said removable element being positioned to retain said button in said depressed position.

41. (Previously Presented) The flush valve of claim 10 wherein said valve member includes a piston.

42. (Previously Presented) The flush valve of claim 10 wherein said valve member includes a flexible diaphragm.

43. (Previously Presented) The flush valve of claim 10 further including a button constructed to move between depressed and extended positions and designed for manually triggering a flush cycle when pushed to said depressed position.

44. (Previously Presented) The flush valve of claim 43 further including a removable element designed for shipping and storage, said removable element being positioned to retain said button in said depressed position.